



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,706	01/22/2004	Rob van Wouw	16664-US	7679

7590 07/29/2005

Stephen D. Dellett
Patent Department
DEERE & COMPANY
One John Deere Place
Moline, IL 61265-8098

EXAMINER

TORRES, ALICIA M

ART UNIT	PAPER NUMBER
----------	--------------

3671

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,706

Applicant(s)

WOUW, ROB VAN

Examiner

Alicia M. Torres

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-10, 13-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 13-15, 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 2, 4, 6, 8, are rejected under 35 U.S.C. 102(b) as being anticipated by Lurwig.

Regarding claims 1, 2, 4, 6, and 8, Lurwig discloses an apparatus comprising:

a gear box (21) mounted to a mower deck (11) of a riding mower, the gear box (21) positioned between the mower deck (11) and an operator platform (not shown) and having a one-piece low-profile housing (51) with a bottom, four sides, and an at least partially open top, a cover (53) over the at least partially open top having an inwardly facing collar (unnumbered, see housing 53 in Figure 2), an input shaft (41) having a terminal end inserted through an opening in one of the sides, an output shaft (45) perpendicular to the input shaft (41) inserted through an opening in the bottom and having a first end adjacent the top, a first roller bearing (54) positioned in the collar around the first end the output shaft (45), a first spiral bevel gear (42) attached to the terminal end of the input shaft (41) adjacent the opening through which the terminal end is inserted and a second spiral bevel gear (44) attached to the output shaft (45) and being engageable with the first spiral bevel gear (42), the input shaft (41) having an axis, the measurement from the axis of the input shaft (41) to the bottom of the housing (51, see the bottom of housing 51 at reference numbers 65, 66 in Figure 2) being greater than the measurement from the axis of the input shaft (41) to the cover (53); as per claim 1; and

Art Unit: 3671

wherein the input shaft (41) has a generally horizontal axis and the output shaft (45) has a generally vertical axis, as per claim 2; and

further comprising threaded fasteners (unnumbered, see Figure 2) connecting the cover (53) to the housing (51), as per claim 4; and

further comprising a rotary cutting blade (47) mounted to the output shaft (45), as per claim 6;

wherein the input shaft (41) is connected to a transmission (not shown), as per claim 8.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lurwig in view of Samejima et al. '561, hereafter Samejima '561.

The device is disclosed as applied to claim 1 above. However, Lurwig fails to disclose wherein the cover has an inner surface with a recess, the recess providing clearance space for the first spiral bevel gear, as per claim 3; and

Further comprising a pulley mounted to the output shaft, and a belt wound around the pulley turning a plurality of rotary cutting blades mounted on vertical shafts, as per claim 7.

Samejima discloses a similar device wherein the cover (unnumbered) has an inner surface with a recess (see Figures 2, 3, 5 and 6), the recess providing clearance space for the first spiral bevel gear (202a), as per claim 3; and

Further comprising a pulley (5A) mounted to the output shaft (202B), and a belt (5) wound around the pulley (5A) turning a plurality of rotary cutting blades (4A) mounted on vertical shafts (see Figures 1 and 4), as per claim 7.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the transmission system of Samejima '561 on the device of Lürwig in order to drive multiple blades.

5. Claims 9, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samejima '561 in view of .

Regarding claims 9, 10 and 13, Samejima '561 discloses an apparatus comprising:

a riding mower (100) having an engine (now shown, see column 2, lines 55, 56), a mower deck (200) under which at least one rotary cutting blade (4A) is positioned to rotate,

an input shaft (202A) having a generally horizontal axis operably connected to the engine, and an output shaft (202B) having a generally vertical shaft having a first end and a second end, the second end connected to the at least one rotary cutting blade (4A); and

a gear box (202) having a housing (203) positioned between the mower deck (200) and the platform (not shown), the housing (203) having an internal volume containing a first spiral bevel gear (202a) mounted to the input shaft (202A) and a second spiral bevel gear (202b) mounted to the output shaft (202B) and meshed with the first spiral bevel gear (202a); the

Art Unit: 3671

internal volume below the generally horizontal axis of the input shaft (202A) being greater than the internal volume above the generally horizontal axis of the input shaft (202A, see Figure 2), as per claim 9; and

further comprising a first opening in the housing for receiving the input shaft and a second opening in the housing for receiving the output shaft, as per claim 10; and

further comprising an internal recess in the removable cover, as per claim 13.

However, Samejima '561 the housing having a removable cover with an inwardly extending collar receiving and positioning a roller bearing to rotatably support the first end of the output shaft, as per claim 9.

Lurwig discloses a similar device wherein the housing (51) has a removable cover (53) with an inwardly extending collar (unnumbered) receiving and positioning a roller bearing (54) to rotatably support the first end of the output shaft (45), as per claim 9.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the cover of Lurwig on the device of Samejima '561 in order to provide ready access to the gear box housing assembly.

6. Claims 14, 15, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lurwig in view of Samejima et al. '855, hereafter Samejima '885.

Regarding claim 14, Lurwig discloses an apparatus comprising:

a riding mower having an operator platform over a mower deck, an engine, a transmission connected to the engine,

Art Unit: 3671

a rotary cutting blade (47) under the mower deck (11) and having with a generally vertical shaft (45) attached thereto, the generally vertical shaft (45) having a first end and a second end;

and

a gear box (21) having a top surface and a bottom surface, and enclosing the first end of the generally horizontal shaft (41) and the first end of the generally vertical shaft (45), the generally vertical shaft (45) extending through the bottom surface of the gear box (21), the gear box (21) housing a pair of spiral bevel gears (42, 44) to change the transmitting direction from the generally horizontal shaft (41) to the generally vertical shaft (45), the housing (51) having a cover (53) with an inwardly extending collar (unnumbered, see cover 53 in Figure 2) for receiving and positioning a roller bearing (54) to rotatably support the first end of the generally vertical shaft (45); the measurement from the generally horizontal shaft (41) to the bottom surface of the gear box (21, at reference numbers 65, 66 shown in Figure 2) being greater than the measurement from the generally horizontal shaft (45) to the top surface (at cover 53) of the gear box (21), as per claim 14; and

wherein the top surface of the gear box (21) comprises a cover (53) attached thereto with threaded fasteners (unnumbered, see Figure 2), as per claim 18; and

wherein the generally vertical shaft (45) has a first section (see the top section shown in Figure 2) with a different diameter than the second section (lower section), as per claim 20.

However, Lurwig fails to disclose a grass mowing machine having an operator platform, an engine, a transmission connected to the engine, and a generally horizontal shaft extending from the transmission, the generally horizontal shaft having a first end and a second end;

Art Unit: 3671

the gear box positioned between the mower deck and operator platform, as per claim 14;
and

further comprising a pulley connected to the generally vertical shaft, and a belt wound around the pulley to turn a plurality of rotary cutting blades, as per claim 15; and

further comprising an operating seat mounted on the operator platform, as per claim 17.

Samejima '885 discloses a grass mowing machine (8) having an operator platform (5, 7), an engine (54), a transmission (56) connected to the engine (54), and a generally horizontal shaft (not shown) extending from the transmission (56), the generally horizontal shaft having a first end and a second end;

the gear box (71) positioned between the mower deck (9) and operator platform (5, 7), as per claim 14; and

further comprising a pulley (13) connected to the generally vertical shaft (12), and a belt (14) wound around the pulley (13) to turn a plurality of rotary cutting blades (10, see Figure 12), as per claim 15; and

further comprising an operating seat (7) mounted on the operator platform (5, 7), as per claim 17.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the mowing machine of Samejima '885 with the gear box of Lurwig in order to provide drive for multiple functions.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lurwig in view of Samejima '885 as applied to claim 14 above, and further in view of van der Lely '359.

The device is disclosed as applied above. However, the combination fails to disclose wherein the pair of spiral bevel gears have different diameters.

Van der Lely '359 discloses a similar device wherein the pair of spiral bevel gears (42, 45) have different diameters.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the different bevel gears of van der Lely '359 on the gear box of Lurwig and Samejima '885 in order to reduce the speed of the shaft.

Response to Arguments

8. In response to applicant's argument that Lurwig and Samejima '561 fail to disclose a riding mower, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). There is no criticality of a riding mower that would require the low-profile gearbox housing of the invention to be mounted only to a "riding mower". The invention could be used on a tractor or a push-mower with no adverse results.

Aside from the intended use problem, it is unclear how the tractor of Lurwig which tows a mower is not a "riding mower". The tractor is ridden and it mows grass.

Regarding the arguments of claim 9, using the cover of Lurwig on the device of Samejima '561 would make the gearing more easily accessible for maintenance.

Art Unit: 3671

Applicant's arguments have been fully considered but they are not persuasive.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Torres whose telephone number is 571-272-6997. The examiner can normally be reached Monday through Thursday from 7:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached at 571-272-6998.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-1113. The fax number for this Group is 571-273-8300.

Thomas B. Will
Supervisory Patent Examiner
Group Art Unit 3671

A handwritten signature in black ink, appearing to be 'T. Will', written over a horizontal line.

AMT
July 22, 2005